

**AMENDMENTS TO THE CLAIMS:**

1. (*withdrawn*) A shaped charge for forming a perforation in a subterranean formation, comprising:

a charge case;

an explosive charge;

a liner for retaining the explosive charge within the case, the liner comprising:

a cap member forming a leading portion of a jet; and

an unconsolidated particulated filler material

forming a particulated portion of the jet.

2. (*withdrawn*) The shaped charge of claim 1 further comprising:

a first liner membrane;

a second liner membrane;

wherein the cap member is disposed upon the first liner membrane and the filler material is disposed between the first and second liner membranes.

3. (*withdrawn*) The shaped charge of claim 1 wherein the filler comprises powdered metal.

4. (*withdrawn*) The shaped charge of claim 1 wherein the filler material is a blend of coarse and fine particles.

5. (*withdrawn*) The shaped charge of claim 1 wherein the first and second liner membranes are comprised of plastic.

6. (*withdrawn*) The shaped charge of claim 1 wherein the first and second liner membranes are comprised of polyester.

7. (*withdrawn*) The shaped charge of claim 1 wherein the first and second liner membranes are comprised of fiberglass.

8.     *(withdrawn)* The shaped charge of claim 1 wherein the first and second liner membranes are comprised of glass.
9.     *(withdrawn)* The shaped charge of claim 3 wherein particles of the powdered metal have a polymer coating.
10.    *(withdrawn)* The shaped charge of claim 9 wherein the powdered metal comprises aluminum and the polymer comprises TEFLON®.
11.    *(withdrawn)* The shaped charge of claim 10 wherein the aluminum is passivated by a polymer coating.
12.    *(withdrawn)* The shaped charge of claim 1 wherein the filler material comprises hollow metal pellets.
13.    *(withdrawn)* The shaped charge of claim 1 wherein the filler material comprises glass balloons.
14.    *(withdrawn)* The shaped charge of claim 1 wherein the filler material comprises nano particles of material from the group consisting essentially of aluminum, copper, tungsten, copper-coated tungsten, and TEFLON®-coated aluminum.
15.    *(withdrawn)* The shaped charge of claim 1 wherein the first and second membranes are contiguously affixed to one another to completely enclose the filler material.
16.    *(withdrawn)* The shaped charge of claim 1 wherein the filler material has a density that is below formation density.

17. (*withdrawn*) The shaped charge of claim 1 wherein the filler material has a density that is below 2.7 g/cc.

18. (*withdrawn*) The shaped charge of claim 3 wherein the powdered metal comprises tungsten.

19. (*withdrawn*) The shaped charge of claim 18 wherein the powdered tungsten is coated with copper.

20. (*previously presented*) A shaped charge for forming a perforation in a subterranean formation, comprising:

a charge case adapted to be positioned in a perforating gun;

an explosive charge formed at least partially of an explosive material;

a liner for retaining the explosive charge within the case, the liner upon detonation of the explosive charge forming a jet having a forward portion and a substantially particulated portion, the particulated portion having a lower density than the forward portion.

21. (*previously presented*) The shaped charge of claim 20 wherein the particulated portion is formed of a filler material having a density of less than 2.7 g/cc.

22. (*cancelled*)

23. (*previously presented*) The shaped charge of claim 21 wherein the filler material comprises powdered aluminum.

24. (*withdrawn*) The shaped charge of claim 23 wherein the filler material further comprises TEFLON®.

25. (*original*) The shaped charge of claim 20 wherein the liner has a shape from

the group consisting essentially of conical, cylindrical, trumpet, tulip, ball, and hemispherical.

26. (*withdrawn*) A method of perforating a formation comprising:  
generating a perforating jet having a metal precursor portion followed by a substantially particulated portion;

penetrating a wellbore casing with said metal precursor portion;

kissing the formation with said precursor portion; and

penetrating said formation with said particulated jet to form a perforation.

27. (*withdrawn*) The method of claim 26 further comprising the step of initiating a secondary detonation reaction within the formation to open pores within the formation surrounding the perforation.

28. (*withdrawn*) The method of claim 27 wherein the step of initiating a secondary detonation reaction comprises heating air-filled pores in unconsolidated aluminum and rapidly oxidizing unconsolidated aluminum via proximity of fluorine atoms in a TEFLON® coating.

29. (*withdrawn*) The method of claim 26 wherein the secondary burning reaction further comprises oxidizing aluminum through a TEFLON® coating.

30. (*withdrawn*) The method of claim 26 further comprising the step of disposing unreacted polymer within the formation to reduce fluid viscosity.

31. (*withdrawn*) The method of claim 26 further comprising the step of disposing unreacted TEFLON® within the formation to reduce fluid viscosity.

32. (*cancelled*)

33. *(previously presented)* The shaped charge of claim 20 further comprising a metal cap disposed upon the liner.
34. *(previously presented)* The shaped charge of claim 20 wherein the liner forming a precursor jet is conformal to the charge case.
35. *(previously presented)* The shaped charge of claim 21 wherein the filler material has a density that approximates the density of an oil bearing formation.
36. *(previously presented)* The shaped charge of claim 20 wherein the forward portion of the jet is adapted to penetrate one of (i) a perforating gun scallop, (ii) a perforating gun cover, (iii) a wellbore casing, and (iv) cement sheath.
37. *(previously presented)* the shaped charge of claim 20 wherein the particulated portion of the jet is adapted to perforate the subterranean formation.
38. *(previously presented)* The shaped charge of claim 20 wherein the particulated portion of the jet is adapted to increase a temperature and reduce interstitial fluid viscosity upon penetration into the subterranean formation.
39. *(withdrawn)* The shaped charge of claim 1 wherein the filler material has a density that approximates the density of an oil bearing formation.
40. *(withdrawn)* The shaped charge of claim 1 wherein the forward portion of the jet penetrates one of (i) a perforating gun scallop, (ii) a perforating gun cover, (iii) a wellbore casing, and (iv) cement sheath.
41. *(withdrawn)* The shaped charge of claim 1 wherein the particulated portion of the jet perforates the subterranean formation.

42. (*withdrawn*) The shaped charge of claim 1 wherein the particulated portion of the jet increases in temperature and reduces interstitial fluid viscosity upon penetration into the subterranean formation.

43. (*new*) A shaped charge for forming a perforation in a subterranean formation, comprising:

- a charge case adapted to be positioned in a perforating gun;

- an explosive charge formed at least partially of an explosive material;

- a liner for retaining the explosive charge within the case, the liner including a metal member configured to form a forward portion of a jet upon detonation of the explosive material; and

- a particulated filler in the charge case, the particulated filler having a lower density than the metal member.

44. (*new*) The shaped charge of claim 43 wherein the particulated filler has a density that approximates the density of an oil bearing formation.

45. (*new*) The shaped charge of claim 43 wherein the metal member is configured to form the forward portion of the jet to penetrate one of (i) a perforating gun scallop, (ii) a perforating gun cover, (iii) a wellbore casing, and (iv) cement sheath.

46. (*new*) The shaped charge of claim 43 wherein the particulated filler is configured to increase a temperature and reduce interstitial fluid viscosity upon penetration into the subterranean formation.